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THE HOOPOE.

[Hoopoe.]

THIS handsome bird, the Ἔποψ, (Epops) of the Ancient Greeks, under which name it figures as a principal character, in Aristophanes's play of "The Birds," *Upupa* of the Latins, *Gallo del Paradiso*, *Pubula*, *Bubola* and *Puppita* of the Italians, *Hupe*, *Huppe* and *Putput* of the French, *El Abubilla* of the Spaniards, *Wiedehopf* of the Germans, *Upupa Epops* of Linnæus, is generally an annual though a rare visitant to these islands. Latham indeed, mentions a nest which a pair began in Hampshire, and deserted on being disturbed; but such instances are not common. We most probably owe their visits to their periodical

migrations, when a few stragglers reach us. The bird is widely spread over Europe in the summer months, and is abundant in the South. Sweden is mentioned by some as its northern limit, where the country people are said to consider its appearance as ominous; and in Great Britain it was formerly looked upon by the same class as the harbinger of some calamity. Montagu relates that it is plentiful in the Russian and Tartarian deserts; and Sonnini saw it on the banks of the Nile: Africa indeed and Asia are supposed to be its winter quarters.

In a state of nature moist localities are the chosen haunts of the hoopoe. There it may be seen on the ground, busily searching with its long bill for its favourite insects, (chiefly coleopterous) which it often finds in cow-dung, and in the droppings of other animals; and sometimes it may be observed hanging from the branches of trees, examining the under side of the leaves for those which there lie hid.

The hole of a decayed tree is the locality generally preferred for the nest, which is made of dried grass lined with feathers, wool or other soft materials, and is generally very fetid from the remains of the insects, &c., with which the parent-birds have supplied their young. This offensive odour most probably gave rise to the story adopted by Aristotle*, that the nest of the hoopoe was formed of the most disgusting materials. When a hollow tree is not to be found, the places selected are sometimes the fissures of rocks, and the crevices of old buildings. The eggs are generally four or five in number, of a greyish-white spotted with deep grey or hair-brown.

Few birds are more entertaining in captivity: its beautiful plumage, droll gesticulations and familiar habits soon make it a favourite. When it perceives that it is observed it begins to tap with its bill against the ground, (which, as Bechstein observes, gives it the appearance of walking with a stick,) at the same time often shaking its wings and tail, and elevating its crest. This latter feat, which is performed very frequently and especially when the bird is surprised or angry, is effected by a muscle situated on the upper part of the head for the purpose. Its note of anger or fear is harsh and grating, something like the noise made by a small saw when employed in sawing, or the note of a jay, but nothing like so loud. It gives utterance to a soft note of complacency occasionally, and is not without other intonations. The grating note is not always indicative of anger or fear, for the bird generally exerts it when it flies up, and settles on its perch.

The following extract from a letter written by M. Von Schauroth, given by Bechstein in his interesting little book on stove-birds or cage-birds, a very good translation of which was published by Orr and Smith last year, cannot fail to interest our readers.

"With great care and attention," writes M. Von Schauroth, "I was able last summer to rear two young hoopoes, taken from a nest which was placed at the top of an oak-tree. These little birds followed me every where, and when they heard me at a distance, showed their joy by a particular chirping, jumped into the air, or, as soon as I was seated climbed on my clothes, particularly when giving them food from a pan of milk, the cream of which they swallowed greedily; they climbed higher and higher, till at last they perched on my shoulders, and sometimes on my head, caressing me very affectionately: notwithstanding this, I had only to speak a word to rid myself of their company; they would then immediately retire to the stove. Generally they would observe my eyes to discover what my temper might be, that they might act accordingly. I fed them like the nightingales, or with the universal paste, to which I sometimes added insects; they would never touch earth-worms, but were very fond of beetles and may-bugs; these they first killed, and then beat them with their beak into a kind of oblong ball; when this was done, they threw it into the air, that they might catch it and swallow it lengthways; if it fell across the throat, they were obliged to begin again. Instead of bathing, they roll in the sand. I took them one day into a neighbouring field, that they might catch insects for themselves, and had then an opportunity of remarking their innate fear of birds of prey, and their instinct under it. As soon as they perceived a raven, or even a pigeon, they were on their bellies in the twinkling of an eye, their wings stretched out by the side of their head, so that the large quill feathers touched; they were thus surrounded by a sort of crown, formed by the feathers of the tail and wings, the head leaning on the back, with the beak pointing upwards; in this curious posture they might be taken for an old rag. As soon as the bird which frightened them was gone, they jumped up immediately, uttering cries of joy. They were very fond of lying in the sun; they showed their content by repeating in quivering tones, "vec, vec, vec;" when angry their notes are harsh, and the male, which is known by its colour being redder, cries "hoop, hoop." The female had the trick of dragging its food about the room, by this means it was covered with small feathers and other rubbish, which by degrees formed into an indigestible ball in its stomach, about the size of a nut, of which it died. The male lived through the winter; but not quitting the heated stove, its beak became so dry that the two parts separated, and remained more than an inch apart; thus it died miserably."

Buffon gives an account of one which was taken in a net when full grown, and became very much attached to its mistress, to whom it would fly for protection. It had two very different tones; one soft and inward, seeming, as Buffon says, to proceed from the very seat of sentiment,—this it addressed to its beloved mistress: the other sharp and more piercing, which expressed anger and fear. It was not confined; and though it had the full range of the house, and the windows were often open, it never showed the least desire to escape; its love of liberty not being so strong as its attachment. It is painful to add that this amiable bird died of hunger.

The hoopoe was not without its uses in the old *Materia Medica*. Thus we read that its heart was good against pains in the side; that the tongue suspended (round the neck we suppose) helped a bad memory; while a fumigation of the feathers was a vermifuge, and the skin cured the head-ache when placed on the ailing part.

Moreover, he who wished to dream astonishing dreams had only to anoint his temples with hoopoe's blood, and the wonderful vision was sure to follow.

Jonston, who enumerates these *formulæ*, adds with great gravity, that he disbelieves the assertion that the right wing of the bird and a tooth, suspended at the head of a sleeper, will keep him in slumber till it be removed.

The plumage of the bird is too well known to need description here. The female is similar to the male, with the exception that her tints are less bright. Those who have tasted the flesh describe it as very unpalatable. A specimen was bought lately at Vienna, and brought to this country. The bird soon after it was purchased became tame, and was remarkably bold, not showing the least fear of a favourite dog, when allowed to come out of his cage. But the severe weather killed it, notwithstanding the great care taken to protect it from cold, and our drawing was copied, by permission, from a plate in Mr. Gould's splendid work, the 'Birds of Europe.'

* Hist. Anim. book 9, c. 15.

THE STEAM-ENGINE.

(From the New Edition of Dr. Lardner on the Steam-Engine,—a work of great research and authority.)

In the year 1811, several of the proprietors of mines in Cornwall, suspecting that some of their engines might not be doing a duty adequate to their consumption of fuel, came to a determination to establish a uniform method of testing the performance of their engines. For this purpose a counter was attached to each engine to register the number of strokes of the piston. All the engines were put under the superintendence of Messrs. Thomas and John Lean, engineers; and the different proprietors of the mines, as well as their directing engineers, respectively pledged themselves to give every facility and assistance in their power for the attainment of so desirable an end. Messrs. Lean were directed to publish a monthly report of the performance of each engine, specifying the name of the mine, the size of the cylinder, the load upon the engine, the length of the stroke, the number of pump lifts, the depth of the lift, the diameter of the pumps, the time worked, the consumption of coals, the load on the pump, and, finally, the duty of the engine, or the number of pounds lifted one foot high by a bushel of coals. The publication of these monthly reports commenced in August, 1811, and have been regularly continued to the present time.

The favourable effect which these reports have produced upon the vigilance of the several engineers, and the emulation they have excited, both among engine-makers and those to whom the working of the machines are intrusted, are rendered conspicuous in the improvement which has gradually taken place in the performance of the engines, up to the present time. In a report published in December, 1826, the highest duty was that of an engine at Wheal Hope mine in Cornwall. By the consumption of one bushel of coals, this engine raised 46,838,246 pounds a foot high, or, in round numbers, forty-seven millions of pounds.

In a report published in the course of the present year (1835) it was announced that a steam-engine, erected at a copper-mine near St. Austle, in Cornwall, had raised by its average work 95 millions of pounds 1 foot high, with a bushel of coals. This enormous mechanical effect having given rise to some doubts as to the correctness of the experiments on which the report was founded, it was agreed that another trial should be made in the presence of a number of competent and disinterested witnesses. This trial accordingly took place a short time since, and was witnessed by a number of the most experienced mining engineers and agents: the result was, that for every bushel of coals consumed under the boiler the engine raised 125½ millions of pounds weight one foot high.

It may not be uninteresting to illustrate the amount of mechanical virtue, which is thus proved to reside in coals, in a more familiar manner.

Since a bushel of coal weighs 84 lbs. and can lift 56,027 tons a foot high, it follows that a pound of coal would raise 667 tons the same height; and that an ounce of coal would raise 42 tons one foot high, or it would raise 18 lbs. a mile high.

Since a force of 18 lbs. is capable of drawing 2 tons upon a railway, it follows that an ounce of coal possesses mechanical virtue sufficient to draw 2 tons a mile, or 1 ton 2 miles, upon a level railway.*

The circumference of the earth measures 25,000 miles. If it were begirt by an iron railway, a load of one ton would be drawn round it in six weeks by the amount of mechanical power which resides in the third part of a ton of coals.

* The actual consumption of coal upon railways is in practice about eight ounces per ton per mile. It is, therefore, worked with sixteen times less effect than in the engine above-mentioned.

The great pyramid of Egypt stands upon a base measuring 700 feet each way, and is 500 feet high; its weight being 12,760,000,000 lbs. To construct it, cost the labour of 100,000 men for 20 years. Its materials would be raised from the ground to their present position by the combustion of 479 tons of coals.

The weight of metal in the Menai bridge is 4,000,000 lbs., and its height above the level of the water is 120 feet: its mass might be lifted from the level of the water to its present position by the combustion of 4 bushels of coals.*

The enormous consumption of coals in the arts and manufactures, and in steam navigation, has of late years excited the fears of some persons as to the possibility of the exhaustion of our mines. These apprehensions, however, may be allayed by the assurance received from the highest mining and geological authorities, that, estimating the present demand from our coal-mines at 16 millions of tons annually, the coal fields of Northumberland and Durham alone are sufficient to supply it for 1700 years, and after the expiration of that time the great coal basin of South Wales would be sufficient to supply the same demand for 2000 years longer.

But, in speculations like these, the probable, if not certain, progress of improvement and discovery ought not to be overlooked; and we may safely pronounce that, long before a minute fraction of such a period of time shall have rolled over, other and more powerful mechanical agents will altogether supersede the use of coal. Philosophy already directs her finger at sources of inexhaustible power in the phenomena of electricity and magnetism. The alternate decomposition and recomposition of water, by magnetism and electricity, has too close an analogy to the alternate processes of vaporisation and condensation, not to occur at once to every mind: the development of the gases from solid matter by the operation of the chemical affinities, and their subsequent condensation into the liquid form, has already been assayed as a source of power. In a word, the general state of physical science at the present moment, the vigour, activity, and sagacity with which researches in it are prosecuted in every civilised country, the increasing consideration in which scientific men are held, and the personal honours and rewards which begin to be conferred upon them, all justify the expectation that we are on the eve of mechanical discoveries still greater than any which have yet appeared; and that the steam-engine itself, with the gigantic powers conferred upon it by the immortal Watt, will dwindle into insignificance in comparison with the hidden powers of nature still to be revealed; and that the day will come when that machine, which is now extending the blessings of civilisation to the most remote skirts of the globe, will cease to have existence except in the page of history.

STEAM NAVIGATION.

To form an approximate estimate of the limit of the present powers of steam navigation, it will be necessary to consider the mutual relation of the capacity or tonnage of the vessel; the magnitude, weight, and power of the machinery; the available stowage for fuel; and the average speed attainable in all weathers, as well as the general purposes to which the vessel is to be appropriated, whether for the transport of goods and merchandise, or merely of despatches and passengers. That portion of the capacity of the vessel which is appropriated to the moving power, consists of the space

* Some of these examples were given by Sir John Herschel, in his Preliminary Discourse on Natural Philosophy; but since that work was written an increased power has been obtained from coals, in the proportion of 7 to 12¼.

occupied by the machinery and the space occupied by the fuel; the magnitude of the latter will necessarily depend upon the length of the voyage which the vessel must make without receiving a fresh supply of coals. If the voyage be short, this space may be proportionally limited, and a greater portion of room will be left for the machinery. If, on the contrary, the voyage be longer, a greater stock of coals will be necessary, and a less space will remain for the machinery. More powerful vessels, therefore, in proportion to their tonnage, may be used for short than for long voyages.

Taking an average of fifty-one voyages made by the Admiralty steamers, from Falmouth to Corfu and back during four years ending June, 1834, it was found that the average rate of steaming, exclusive of stoppages, was $7\frac{1}{4}$ miles per hour, taken in a direct line between the places, and without allowing for the necessary deviations in the course of the vessel. The vessels which performed this voyage varied from 350 to 700 tons burden by measurement, and were provided with engines varying from 100 horse to 200 horse-power, with stowage for coals varying from 80 to 240 tons. The proportion of the power to the tonnage varied from 1 horse to 3 tons to 1 horse to 4 tons; thus, the Messenger had a power of 200 horses, and measured 730 tons; the Flamer had a power of 120 horses, and measured 500 tons; the Columbia had 120 horses, and measured 360 tons.

In general, it may be assumed that for the shortest class of trips, such as those of the Margate steamers, and the packets between Liverpool or Holyhead and Dublin, the proportion of the power to the tonnage should be that of 1 horse-power to every 2 tons by measure; while for the longest voyages the proportion would be reduced to 1 horse to 4 tons, voyages of intermediate lengths having every variety of intermediate proportion.

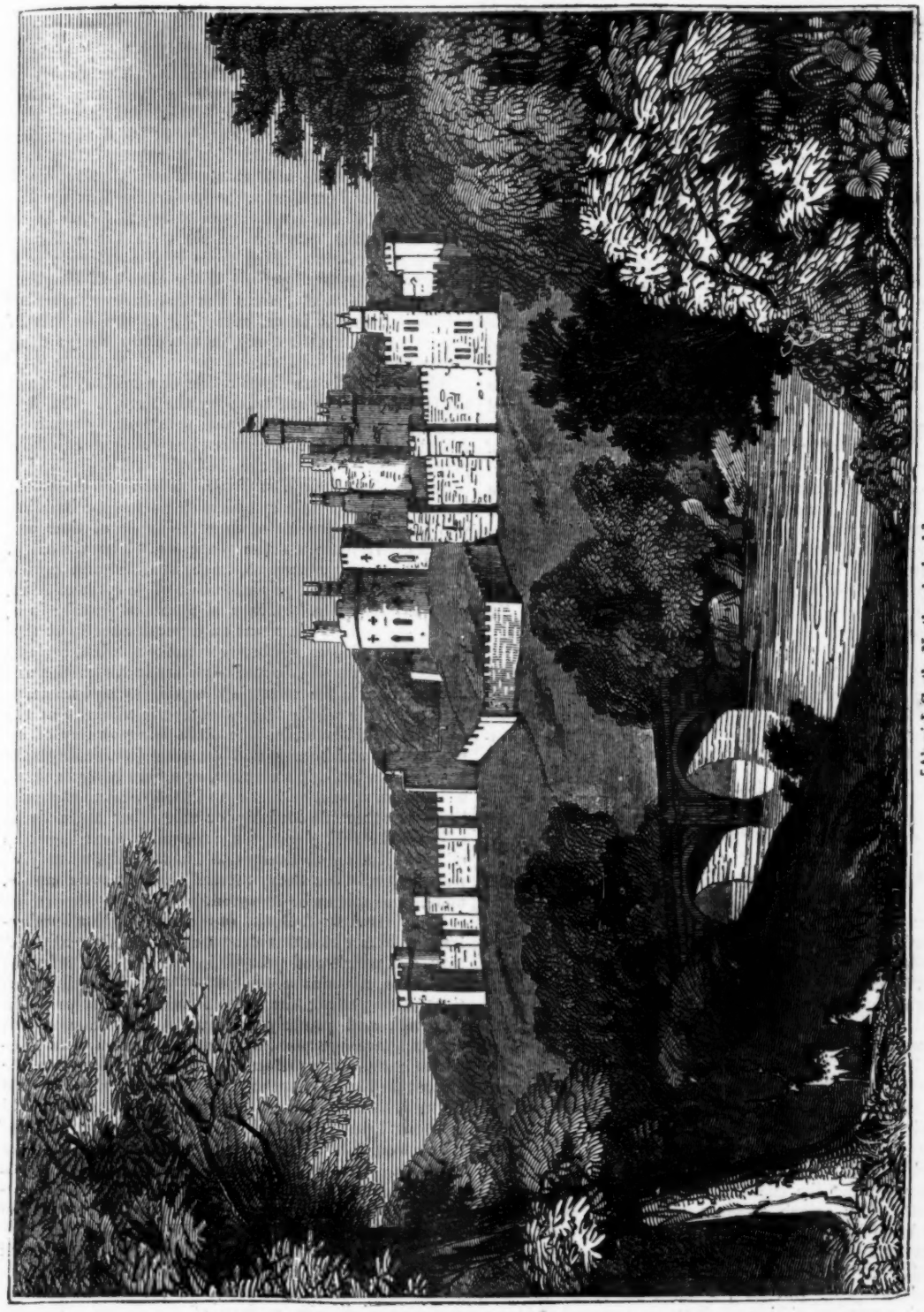
Steamers thus proportioned in their power and tonnage may then, on an average of weathers, be expected to make $7\frac{1}{4}$ miles an hour while steaming, which is equivalent to 174 miles per day of twenty-four hours. But, in very long voyages, it rarely happens that a steamer can work constantly without interruption. Besides stress of weather, in which she must sometimes lie-to, she is liable to occasional derangements of her machinery, and more especially of her paddles. In almost every long voyage hitherto attempted, some time has been lost in occasional repairs of this nature while at sea. We shall perhaps, therefore, for long voyages, arrive at a more correct estimate of the daily run of a steamer by taking it at 160 miles.

By a series of carefully-conducted experiments on the consumption of coals, under marine boilers and common land boilers, which have been lately made at the works of Mr. Watt, near Birmingham, it has been proved that the consumption of fuel under marine boilers is less than under land boilers, in the proportion of 2 to 3 very nearly. On the other hand, I have ascertained from general observation throughout the manufacturing districts in the north of England, that the average consumption of coals under land boilers of all powers above the very smallest class is at the rate of 15 lbs. of coals per horse-power per hour. From this result, the accuracy of which may be fully relied upon, combined with the result of the experiments just mentioned at Soho, we may conclude that the average consumption of marine boilers will be at the rate of 10 lbs. of coal per horse-power per hour. Mr. Field, of the firm of Maudslay and Field, in his evidence before a Select Committee of the House of Commons on Steam Navigation to India, has stated from his observation, and from experiments made at different periods, that the consumption is only 8 lbs. per horse-power per hour. In the evidence of Mr. William Morgan, however, before the same committee, the actual consumption of fuel on board the Mediterranean packets is estimated at 16 cwt. per hour for engines of 200 horse-power, and $8\frac{1}{4}$ cwt. for engines of 100 horse-power. From my own observation, which has been rather extensive both with respect to land and marine boilers, I feel assured that 10 lbs. per hour more nearly represents the practical consumption than the lower estimate of Mr. Field. We may then assume the daily consumption of coal by marine boilers, allowing them to work upon an average for 22 hours, the remainder of the time being left for casual stoppages, at 220 lbs. of coal per horse power, or very nearly 1 ton for every ten horses' power. In short voyages, where there will be no stoppage, the daily consumption will a little exceed this; but the distance traversed will be proportionally greater.

When the proportion of the power to the tonnage remains unaltered, the speed of the vessel does not materially change. We may therefore assume that 10 lbs. of coal per horse power will carry a sea-going steamer adapted for long voyages $7\frac{1}{4}$ miles direct distance; and therefore to carry her 100 miles will require 138 lbs., or the $\frac{1}{16}$th part of a ton nearly. Now, the Mediterranean steamers are capable of taking a quantity of fuel at the rate of $1\frac{1}{2}$ tons per horse power; but the proportion of their power to their tonnage is greater than that which would probably be adapted for longer runs. We shall, therefore, perhaps be warranted in assuming that it is practicable to construct a steamer capable of taking $1\frac{1}{2}$ tons of fuel per horse-power. At the rate of consumption just mentioned, this would be sufficient to carry her 2400 miles in average weather; but as an allowance of fuel must always be made for emergencies, we cannot suppose it possible for her to encounter this extreme run. Allowing, then, spare fuel to the extent of a quarter of a ton per horse-power, we should have as an extreme limit of a steamer's practicable voyage, without receiving a relay of coals, a run of about 2000 miles.

War.—Another powerful spring of war is the admiration of the brilliant qualities displayed in war. These qualities, more than all things, have prevented an impression of the crimes and miseries of this savage custom. Many delight in war, not for its carnage and woes, but for its valour and apparent magnanimity,—for the self-command of the hero, —the fortitude which despises suffering,—the resolution which courts danger,—the superiority of the mind to the body,—to sensation,—to fear. Let us be just to human nature even in its errors and excesses. Men seldom delight in war, considered merely as a source of misery. When they hear of battles, the picture which rises to their view is not what it should be, a picture of extreme wretchedness, of the wounded, the mangled, the slain. These horrors are hidden under the splendour of those mighty energies, which break forth amidst the perils of conflict, and which human nature contemplates with an intense and heart-thrilling delight. Attention hurries from the heaps of the slaughtered to the victorious chief, whose single mind pervades and animates a host, and directs with stern composure the storm of battle; and the ruin which he spreads is forgotten in admiration of his power. This admiration has, in all ages, been expressed by the most unequivocal signs. Why that garland woven? that arch erected? that festive board spread? These are tributes to the warrior. Whilst the peaceful sovereign, who scatters blessings with the silence and constancy of Providence, is received with a faint applause, men assemble in crowds to hail the conqueror, perhaps a monster in human form, whose private life is blackened with lust and crime, and whose greatness is built on perfidy and usurpation. Thus war is the surest and speediest road to renown; and war will never cease while the field of battle is the field of glory, and the most luxuriant laurels grow from a root nourished with blood.—*From Discourses, Reviews, and Miscellanies, by the Rev. W. E. Channing.*

ALNWICK CASTLE.



[Alnwick Castle, Northumberland.]

Alnwick Castle, one of the seats of the Duke of Northumberland, is interesting from its antiquity, the stirring events connected with its history, and its present state of complete restoration: it now exhibits one of the best specimens of the old baronial structures of Great Britain. The castle is placed on an eminence, which rises from the south side of the river Alne, opposite to the town of Alnwick. It is stated by Grose, that immediately before the Norman conquest, the castle and barony of Alnwick belonged to a baron of the name of Gilbert Tyson, who was slain with Harold at the fatal battle which gave William the crown of England. The possession passed into the hands of the Norman lords de Vescy, where it remained until the reign of Edward I., when, in 1297, Lord William de Vescy dying without legitimate issue, he, by the king's

licence, bequeathed the castle and barony to the Bishop of Durham, who, twelve years afterwards, sold them to the Lord Henry de Percy, from whom they have come down, in regular succession, to the present noble occupants.

At whatever time a castle was first erected here, it was a place of great strength from a very early period. In the reign of William Rufus, Malcolm III. of Scotland, surnamed Cean-mohr, or Great-head, laid siege to Alnwick Castle, and both he and his son fell in a conflict with a party of Anglo-Norman troops, who came to the assistance of the besieged. A story has been long repeated in the common histories connected with this siege, and the death of Malcolm. It is stated that the garrison of the castle, despairing of succour, were on the point of surrendering to the Scotch, when a soldier rode forth completely armed, and, presenting the keys of the castle to the incautious king on the point of a spear, he suddenly pierced his eye, and killed him, and, by the fleetness of his horse, escaped across the river, which was then swollen with rain. To this the fable adds, that the author of the successful stratagem obtained the name of Percy from "pierce eye," and that he became the founder of the house of Northumberland. The latter part of the story has been long ago shown to be pure invention, for William de Percy, the ancestor of the family, came over with the Conqueror, and had founded Whitby Abbey, in Yorkshire, before the death of Malcolm, as appears from the charter of foundation which bears his name. The surname Percy was derived from the family domain in Normandy; and, as has been already mentioned, the Percys did not become possessed of Alnwick till about the beginning of the fourteenth century. The former part of the story,—that of Malcolm being actually slain by a soldier from the garrison, who pretended to present the keys of the castle,—though it rests on somewhat better evidence than the latter, is also, in all probability, fabulous. Sir Walter Scott states that Roger de Mowbray, a Norman baron, at the head of a considerable force, surprised the Scotch king before the walls of Alnwick, on the 13th of November 1098, and that an action ensued, in which Malcolm Cean-mohr and his son were both slain.

Alnwick Castle proved disastrous to another Scotch king, William, surnamed the Lion, from his having been the first to adopt the lion into the royal arms of Scotland. The celebrated Richard Cœur de Lion, while young, having rebelled against his father, Henry II., William needlessly interfered in the fray, and engaged to help the rebel son against his sovereign and parent. In pursuance of his engagement, he entered Northumberland with a tumultuary army, and laid siege to Alnwick. A party of about 400 English horse had sallied from Newcastle one morning in quest of adventure; they were enveloped in a mist, and lost their way; but on the mist suddenly clearing up, they found themselves in the neighbourhood of Alnwick, and not far from William, who, with about 60 horse, was scouring the country, the rest of his army being scattered in search of plunder. William at first mistook the English horse for a part of his own troops; but being informed of his mistake, he gallantly exclaimed, "Now shall we see who are good knights!" and charged. But he was unhorsed, taken prisoner, with a number of his attendants, and carried to Henry II., to whom he was presented with his legs tied beneath his horse's belly. Henry was doubtless exasperated at William's interference in the quarrel between himself and his son; nor was the Scottish monarch released from captivity until, by a special treaty, he bound himself as the liegeman of Henry, and engaged to do homage for Scotland. This occurred in the year 1174. After Henry's death, Richard, previous to his departure for the Holy Land, annulled the degrading treaty on being paid 10,000 marks.

It would greatly exceed our limits to give a history of Alnwick Castle, for such a history would in fact embrace a history of the "debateable land," and all the feuds and forays of the borders. The names of Percy and Douglas are amongst the most renowned in the ballad lore of our country. The bloody contests of rival chiefs, or the fatal inroads of rival monarchs, frequently turned the entire border country into a vast desert of desolation and ruin. When plunder could not be obtained on a foray, the ravagers endeavoured to bring home at least a booty of "men;" for, as in all such cases, the common people were the sufferers. The prisoners thus taken were sold as slaves; and there are occasional periods in the annals of England and Scotland, when, from the immense number of prisoners brought home, according to the success of either party, slaves became, in modern phrase, a drug in the market.

Alnwick Castle was kept rather as a military fortress than as a domestic residence by the Percys. On first coming into their hands, it was substantially repaired. About the year 1567, a minute survey was made of the place by the surveyor of the Earl of Northumberland, a copy of which is given in Grose. From this document it would appear that a considerable part of the building was in a defective state, from the lapse of time and injuries. It describes the place as "The Castell of Alnewike, a verye ancyent, large, beutifull and portlie castell, scytewate on ye southe side of ye ryver of Alne, upon a lytle mote." There is a curious passage in it, which shows that glass was an expensive rarity at that time:—"And because throwe extreme winds the glasse of the windowes of this and other my lord's castles and houses here in the countrie dooth decay and waste, yt vere good the whole leights of everie windowe at the departure of his lordshippe from lying at any of his said castels and houses, and dowring [*i. e.* during] the tyme of his lordship's absence, or others lying in them, were taken downe, and lade up in safty. And at sooche tyme as ather his lordship or anie other shole lie at anie of the said places, the same might then be set up of new with small charges to his lordship, wher [*i. e.*, whereas] now the decay thereof shall be verie costlie, and chargeable to be repayred."

The 'Household Book' of the Earl of Northumberland, a MS. which was drawn up in the sixteenth century, and which was printed in the year 1780 by the late duke, contains a number of very interesting particulars respecting the style of living at that period in this rich and princely family. The mention of this circumstance has no immediate connexion with Alnwick Castle, further than that Alnwick belongs to the Duke of Northumberland: for the regulations laid down in the book are for the direction of the household at Wressil and Leckinfield castles. The same style of living would however be kept up when the earl visited Alnwick. This book, as the editor remarks, exhibits a curious picture of ancient manners. The Earl of Northumberland emulated a royal style; all the head officers of his household were gentlemen by birth; and among other instances of magnificence it may be stated that not fewer than eleven priests were kept in the household, at the head of whom presided a doctor or bachelor of divinity, as dean of the chapel. The earl and his family ordinarily used wooden trenchers at their meals, but on great occasions pewter vessels were hired to grace the board. In removing, all the beds, hangings, and furniture, were carried from one castle to another. On such an occasion the number of carts employed in a family of this size must have formed a caravan nearly as large as those which traverse the deserts of the East. In fact, the mingling of rude mag-

nificence and splendour with what, now-a-days, would be termed misery, poverty, and distress, meets us wherever we obtain a view of the domestic manners of the nobility of the feudal times.

About eight years ago, the then Duke of Northumberland re-edified Alnwick Castle at an expense, as stated, of nearly 200,000*l*. So solicitous was he to have the castle rebuilt after the precise model of the old one, that he preserved a number of stone warriors which formerly graced the battlements, and replaced them in their old positions; and such as were too feeble, from age and injuries, to occupy their stations he dismissed, but got new statues cut to supply their place, that nothing might be wanting. The castle now is therefore quite a model of what Alnwick was in the days of the border chivalry. The entrance, like that of Warwick Castle, is through a large gate between two high round towers; this opens into a spacious court, surrounded on all sides by walls with high battlements. The part of the castle which contains the family residence, stands on an artificial elevation in the centre of the inner court. The apartments are fitted up in a very splendid manner. The library, which is a room of 64 feet in length, has a very good selection of books. The chapel is elaborately decorated. The ceiling is an imitation of the ceiling of the chapel of King's College, Cambridge; the paintings on the walls are borrowed from those of the cathedral of Milan; and the genealogical table of the house of Northumberland is interwoven with them. The chapel is 50 feet in length, 22 in height, and 21 in breadth. The apartments for the servants are in the towers. The keep or prison is partly above and partly under ground.

Alnwick castle is situated in the neighbourhood of a number of interesting objects. The town of Alnwick itself—the ruins of two abbeys—Warkworth castle and hermitage—one or two monuments—Morpeth castle, &c. are all within a moderate distance. The grounds round Alnwick castle are in very fine order.

DESCRIPTION OF THE PROCESS OF MALTING.

(From the Fifteenth Report of the Commissioners of Excise Inquiry.)

Barley is the grain generally used, but oats and other grain, and pulse, viz., beans and peas, are sometimes used for the purpose; and the process commences with wetting or steeping the same in an oblong or square vessel called a cistern. Sometimes the grain is first put into the cistern and then covered with water, at other times the water is first put in and the grain added afterwards.

Very soon after the grain has been covered with water it begins to swell and increase in bulk, and continues to do so pretty regularly until it reaches its maximum. The amount of the swell depends not only upon the length of time the grain remains in the steep covered with water (which by law can in no case be less than forty hours), but also upon its quality, and state of dryness before put in steep, and must of course be expected to vary; but the law presumes that the swell will amount to seventeen and a-half bushels for every eighty-two and a-half bushels before steeped.

The grain, after being steeped, and the water drawn off, is thrown out of the cistern into a square or oblong utensil called a couch-frame, in which it is required by law to remain for the space of twenty-six hours at the least. Immediately after the expiration of twenty six or thirty hours, as the case may be, the grain in operation is said to be on the floor; and during the time it remains on the floor it undergoes a variety of changes.

1st. The grain at a certain period (which varies according to circumstances) becomes moist, and emits a rather agreeable smell, and soon after this period the roots begin to make their appearance.

2nd. The acrospire or future stem begins to swell, and gradually advances under the husk from the same end where the roots are observed to spring, till it nearly reaches the other extremity of the grain.

3rd. The kernel, as the acrospire advances through it, becomes friable and sweet-tasted, and the whole art of malting depends upon the proper regulation of these changes. In a day or two after the grain has been thrown out of the cistern the roots begin to appear at the end of each kernel in the shape of a small white protuberance, which soon divides itself into distinct fibres or rootlets. The grain about this time appears moist on the outside, which is called *sweating*, and which usually goes off in a day or two.

In about a day generally after the spreading of the roots, the rudiments of the future stem may, by splitting the grain, be seen to lengthen. It rises from the same extremity with the root, and, advancing within the husk, would at last issue from the opposite end of the grain and assume the form of a green blade of grass; but the process of malting is brought to a conclusion some time before the stem has made such progress as to burst the husk.

As the germination proceeds, the grain is gradually spread thinner on the floor; and when the moisture has been in some degree evaporated, and the germination has thereby been checked, it is again gradually laid thinner to wither. Maltsters differ much in their manner of working, which is affected also by the state of the weather.

The grain having thus germinated to the extent required is put upon the kiln, and heat applied by means of a fire, which is regulated according to circumstances; and when the malt has attained the requisite state of dryness it is thrown off the kiln, the process being then finished.

THE FORGING OF THE ANCHOR.

By S. Ferguson.

(Copied by Permission of the Author from Blackwood's Magazine.)

"Come, see the Dolphin's Anchor forg'd; 'tis at a white heat now:
The bellows ceased, the flames decreased; though on the forge's brow,
The little flames still fitfully play through the sable mound;
And fitfully you still may see the grim smiths ranking round,
All clad in leathern panoply, their broad hands only bare;
Some rest upon their sledges here, some work the windlass there.

The windlass strains the tackle chains, the black mound heaves below;
And red and deep a hundred veins burst out at every throe:
It rises, roars, rends all outright—O, Vulcan, what a glow!
'Tis blinding white, 'tis blasting bright; the high sun shines not so!
The high sun sees not, on the earth, such fiery fearful show;
The roof-ribs swarth, the candent hearth, the ruddy lurid row
Of smiths, that stand, an ardent band, like men before the foe;
As, quivering through his fleece of flame, the sailing monster, slow
Sinks on the anvil—all about the faces fiery grow—
'Hurrah!' they shout, 'leap out—leap out;' bang, bang, the sledges go:
Hurrah! the jetted lightnings are hissing high and low;
A hailing fount of fire is struck at every squashing blow;
The leathern mail rebounds the hail; the rattling cinders strow
The ground around; at every bound the sweltering fountains flow;
And thick and loud the swinking crowd at every stroke pant 'ho!'

Leap out, leap out, my masters; leap out and lay on load!
Let's forge a goodly anchor; a Bower, thick and broad:
For a heart of oak is hanging on every blow, I bode;
And I see the good ship riding all in a perilous road
The low reef roaring on her lee; the roll of ocean poured
From stem to stern, sea after sea; the mainmast by the board;
The bulwarks down; the rudder gone; the boats stove at the chains;
But courage still, brave mariners—the Bower yet remains,
And not an inch to flinch he deigns save when ye pitch sky high,
Then moves his head, as though he said, 'Fear nothing—here am I!'

Swing in your strokes in order; let foot and hand keep time,
Your blows make music sweeter far than any steeple's chime;
But while ye swing your sledges, sing; and let the burthen be,
The anchor is the anvil king, and royal craftsmen we!
Strike in, strike in—the sparks begin to dull their rustling red;
Our hammers ring with sharper din, our work will soon be sped:
Our anchor soon must change his bed of fiery rich array
For a hammock at the roaring bows, or an oozy couch of clay;
Our anchor soon must change the lay of merry craftsmen here,
For the yeo-heave-o', and the heave-away, and the sighing seaman's cheer;
When, weighing slow, at eve they go, far, far from love and home;
And sobbing sweethearts, in a row, wail o'er the ocean foam.
In livid and obdurate gloom he darkens down at last;
A shapely one he is, and strong, as e'er from cat was cast.—
O trusted and trustworthy guard, if thou hadst life like me,
What pleasures would thy toils reward beneath the deep green sea!
O deep sea-diver, who might then behold such sights as thou?
The hoary monster's palaces! methinks what joy 'twere now
To go plumb plunging down amid the assembly of the whales,
And feel the churn'd sea round me boil beneath their scourging tails!
Then deep in tangle-woods to fight the fierce sea unicorn,
And send him foiled and bellowing back, for all his ivory horn;
To leave the subtle sworder-fish of bony blade forlorn;
And for the ghastly-grinning shark to laugh his jaws to scorn;
To leap down on the kraken's back, where 'mid Norwegian isles
He lies, a lubber anchorage for sudden shallowed miles;
Till snorting, like an under-sea volcano, off he rolls;
Meanwhile to swing, a-buffeting the far-astonished shoals
Of his back-browsing ocean calves; or, haply in a cove,
Shell-strown, and consecrate of old to some Undine's love,
To find the long-hair'd mermaidens; or, hard by icy lands,
To wrestle with the sea-serpent, upon cerulean sands.

O broad-armed fisher of the deep, whose sports can equal thine?
The Dolphin weighs a thousand tons that tugs thy cable line;
And night by night 'tis thy delight, thy glory day by day,
Through sable sea and breaker white, the giant game to play;
But, shamer of our little sports! forgive the name I gave,
A fisher's joy is to destroy—thine office is to save.
O lodger in the sea-king's halls, couldst thou but understand
Whose be the white bones by thy side, or who that dripping band,
Slow swaying in the heaving wave that round about thee bend,
With sounds like breakers in a dream blessing their ancient friend:
Oh, couldst thou know what heroes glide with larger steps round thee,
Thine iron side would swell with pride; thou'dst leap within the sea!

Give honour to their memories who left the pleasant strand,
To shed their blood so freely for the love of father-land,
Who left their chance of quiet age and grassy churchyard grave,
So freely, for a restless bed amid the tossing wave:
Oh, though our anchor may not be all I have fondly sung,
Honour him for their memory, whose bones he goes among!"

WHALE FISHERY ON THE COAST OF IRELAND.

IT appears from evidence given during the last Session of Parliament before a Committee on Public Works in Ireland, that the whale fishery might be carried on with advantage on the north-west coast of Ireland. The following extract of a letter from Lieutenant Boroughs, Commander of the Coast Guard, contains many curious details:—

It is very extraordinary, and still very true, that this coast (one of the best fishing coasts in Europe, abounding from the most productive whales, both spermaceti and Greenland, to the common herring), possesses the worst and most ignorant race of fishermen, and (with a few exceptions) very indifferent boatmen. But the cause of these remarks may be easily accounted for; their poverty, which prevents them from procuring proper stout vessels for so dangerous a coast, and almost total absence of all patronage and support to follow up with energy and spirit the unbounded sources of wealth which nature has thrown within their grasp. It may appear still more extraordinary to those connected so extensively in the Greenland and South Sea whale fishery, that they should so long have remained in ignorance that those fish abound on the coast which I have described. In order to give proof to so bold an assertion, I shall state some circumstances which came under my immediate observation in my own vessels, and at a subsequent period in command of a revenue cutter. On a visit, in company with the Rev. Mr. Mahon, to the sun-fishery at Bofin Island, we strayed on a blustry day to observe the coast and breakers; at a short distance from the shore we saw several large fish, which I supposed to be grampuses or finners, that had taken shelter under the lee of the island: still looking closely at them, they advanced towards the rocks immediately under the cliffs, where we had a perfect view of them at a distance of 500 yards with a spy-glass, their double-tufted heads quite conspicuous, and no intervening back-fins; I decided at once on their species. In the month of July, after the sun-fishery, a large spermaceti whale was drifted on shore, dead, at the bay of Bunowen, in Connemara, about two leagues from Cliffden or Ardbear Harbour; in consequence of the ignorance of the peasantry and boatmen, and their continual squabbling and fighting, three-fourths of the oil was lost; the surface of the bay was dyed with a rainbow tinge from the floating particles of oil. Shortly after an immense fish was towed into the island of Turk by three of the island fishing-boats; the monster was observed floating about a mile from the island, and had been but recently killed, but how could not be ascertained; this fish completely filled up the small and only inlet in the island, and measured in length thirty-three yards; it was claimed by the proprietor, I believe the Archbishop of Tuam, who, I had been informed, gave it up to the islanders. A small village near the place where they had towed it to shortly became deserted, the inhabitants never calculating on the fœtid air caused by their imprudence. The islanders were two months employed in cutting up and launching over the cliffs the bones and remains of their prize. About the beginning of August, in beating down Blacksod bay with light airs, and near the islands of Inniskeas, two large whales came nearly alongside the cutter; the day very fine, and making but little way, I ordered the gig and jolly-boat out and pursued them; and had the men been sufficiently acquainted with the art, I should have succeeded in killing them; they allowed me to go alongside them, and I was only prevented from striking them by the bowman, who intercepted me at the moment by panic, being fearful of the event of a lash of the tail. What the result might have been I know not, but nothing could have been easier accomplished than striking them, and only in fifteen fathoms water. I had been after these whales three hours, and they never went above about 300 yards from our boats, and at that distance turned their huge heads towards the boats, and got wary. I gave up following towards evening; had I struck them at the commencement of our chase, when they were perfectly tame, I might have succeeded, even with the sun-fish spear and line, owing to the small depth of water.

Labourers in Denmark.—In Denmark, notwithstanding Sunday is nearly as much a work-day as any other, the wages of labourers do not usually amount to more than 15*l.* a-year. Women earn about 4*d.* a day. The united earnings of a family, consisting of a labourer and his wife with three or four children, will not enable them to purchase anything better as food than rye-bread, bad milk-cheese and butter and poor coffee; to which must be added tobacco and snuff, and cheap bad spirits, which they consume in large quantities. The weekly earnings of a spinner are 6*s.* or 7*s.*; and those of a weaver are from 7*s.* to 12*s.* In the most favourable situations, the diet is not so bad as we have mentioned.—*From an article on the Condition of Working Men in Europe, in the 'Working Man's Year Book for* 1836.'

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